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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/578,108

05/02/2006

Andreas Schilling

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EXAMINER

AMARI, ALESSANDRO V

ART UNIT

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2872

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/578,108	Applicant(s) SCHILLING ET AL.	
	Examiner ALESSANDRO AMARI	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/2/06; 1/17/08</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: The specification does not have the proper section headings. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Appropriate correction is required.

Claim Objections

2. Claims 12-15 are objected to because of the following informalities:

Regarding claim 12, line 2, the phrase, "the linear diffraction gratings" has no prior mention in the preceding claim 1. Claims 13-14 inherit the same issue.

Regarding claim 15, the recitation of "the diffractive scatters" has no prior mention in the preceding claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to claim 1, lines 6, the claim recites that "the surface portions with the first surface structures form background fields" whereas line 7 then recites "the surface portions with the surface structure". Firstly, there is lack of proper antecedent basis since the claim only previously recites "microscopically fine surface structures (see line 2)". Furthermore, it is unclear whether the "first surface structures" (line 6) refer to these "microscopically fine surface structures" or some other structure and whether the recitation of "the surface structure" (line 7) refers to the first surface structures or the microscopically fine surface structures or some other structure. Furthermore, lines 18-

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19 of claim 1 recite “the first and second surface structures” but the preceding lines of the claim only recite a “first surface structure”, therefore there is lack of proper antecedent basis. Thus, the claim is indefinite since the metes and bounds of the claim (particularly regarding the various surface structures) cannot be determined. Claims 2-17 inherit the same deficiency.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 7, 8, 11 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling et al (hereafter “Schilling”) US 2004/0130760 in view of Staub et al (hereafter “Staub”) US 6,417,968.

In regard to claim 1, Schilling teaches (see Figs. 1, 2, 8) a diffractive security element with a half-tone image comprising surface portions (12, 13, 14) occupied with microscopically fine surface structures enclosed in a layer composite which includes at least a transparent embossing layer (5), a protective lacquer layer (7) and a reflection layer (10), with the surface structures which is embedded between the embossing layer and the protective lacquer layer as shown in Figure 1, wherein the surface portions with the first surface structures form background fields (12, 13, 14, 32) and the surface portions with the surface structure which differs from the first surface structures in at

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least one structural parameter form image element patterns (16, 33) and the surface of the half-tone image is divided into a plurality of image elements which are composed of the surface portions of the image element pattern and the background field and which are smaller than 1 mm at least in one dimension as shown in Figures 2 and 8 and as described in paragraphs [0017] – [0022] as understood by the current claim recitation.

However in regard to claim 1, Schilling does not teach the image element patterns in the image elements are of the same size, pattern strips extend with a line pattern of a width of 15 μm to 300 μm at least over a part of the surface of the half-tone image and partially cover the background fields and image element patterns, the line pattern is formed from surface strips with pattern structures and with line widths in the range of 5 μm to 50 μm , wherein the line patterns include letters, texts, line elements and pictograms and the pattern structures differ from the first and second surface structures in at least one structural parameter, the line width of the surface strips in the background fields is constant and the surface brightness of the image elements is controlled by means of the line width of the surface strips on the image element pattern in such a way that the surface proportion of the image element pattern not covered by the line pattern is determined in accordance with the surface brightness of the image original of the half-tone image at the location of the image element and having regard to the surface brightness of the adjacent image elements.

In regard to claim 1, Staub teaches (see Figs. 1-4, 7) the image element patterns in the image elements are of the same size, pattern strips extend with a line pattern of a width of 15 μm to 300 μm at least over a part of the surface of the half-tone image and

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partially cover the background fields and image element patterns, the line pattern is formed from surface strips with pattern structures and with line widths in the range of 5 μm to 50 μm , wherein the line patterns include letters, texts, line elements and pictograms and the pattern structures differ from the first and second surface structures in at least one structural parameter, the line width of the surface strips in the background fields is constant and the surface brightness of the image elements is controlled by means of the line width of the surface strips on the image element pattern in such a way that the surface proportion of the image element pattern not covered by the line pattern is determined in accordance with the surface brightness of the image original of the half-tone image at the location of the image element and having regard to the surface brightness of the adjacent image elements as described in column 3, lines 7-67 and column 4, lines 1-43 as understood by the current claim recitation.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the surface patterns of Staub in the diffractive security element of Schilling in order to provide an inexpensive authenticity feature which is readily visible in diffuse light and which is difficult to forge even with holographic copying processes.

Regarding claim 7, Staub teaches that the first surface structures and the second surface structures are asymmetrical diffraction gratings, wherein the grating vectors of the asymmetrical diffraction gratings of the first surface structures are oriented in opposite relationship to the grating vectors of the second surface structures as described in column 2, lines 65-67 and column 3, lines 1-6.

Regarding claim 8, Staub teaches that the second surface structure in the surfaces of the image element patterns is a diffractive scatterer selected from the group of isotropic and anisotropic matt structures, kinoforms, diffraction gratings with circular grooves at a groove spacing of 1 to 3 μm and the matt structures superimposed with a diffraction grating as described in column 7, lines 32-62.

Regarding claim 11, Staub teaches that the first surface structures and the second surface structure are linear or meandering diffraction gratings which differ in spatial frequency as described in column 7, lines 32-62.

Regarding claim 15, Staub teaches that the pattern structure is one of the diffractive scatters as described in column 3, lines 7-67 and column 4, lines 1-43.

Regarding claim 16, Staub teaches that the half-tone image is part of a mosaic of surface portions occupied by surface structures which are independent of the half-tone image as shown in Figure 6 of Staub.

Regarding claim 17, Staub teaches (see Fig. 1) that the layer composite is adapted to be fixed by adhesive (8) on a substrate as described in paragraph [0017].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALESSANDRO AMARI whose telephone number is (571)272-2306. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on (571) 272-2434. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ava
20 August 2009

/Alessandro Amari/
Primary Examiner, Art Unit 2872